

VK3NY

AMATEUR RADIO



Published in the interests of the Wireless
Institute of Australia, Official Organ of all
divisions of the W.I.A. and R.A.A.F.W.R.

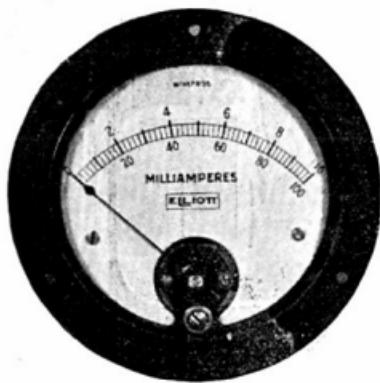


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AMATEUR RADIO

Published by the Wireless Institute of Aust., Victorian Division.

Vol. 5 No. 12

1st December, 1937.

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All Communications and MSS. should be forwarded to the Editor, "Amateur Radio," BOX 2611W, G.P.O., MELBOURNE.

Subscription to "Amateur Radio" is 6/- per Annum (Post Free), paid in advance.

Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

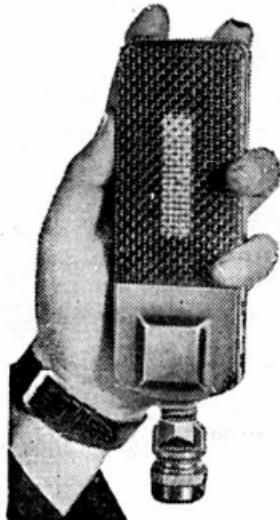
Advertising and Publishing Office: Address Publicity Manager, "Amateur Radio," Whitehorse Road, Box Hill, E.11. 'Phone: WX 2429.

NOTE.—ADVERTISERS' CHANGE OF COPY MUST BE IN HAND NOT LATER THAN THE 20th OF THE MONTH PRECEDING PUBLICATION.

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EDITORIAL



Our little magazine, known under various titles, such as "Ham Radio," "A.R.," "The Mag.," and probably many other less polite names, has been plodding along for four years and a bit now. We feel that it is some sort of an achievement, and, in spite of much opposition, we may say that the standard, for a country with comparatively few hams, is rather high. A magazine is what its supporters make it, and if anyone should feel that it is not up to scratch then he himself is to blame. After all, there is only one editor, one technical editor, one notes editor, one compilation man, and one of each of the other vital office-bearers running the mag., but every member of the W.I.A. is an assistant to these men. The greater the assistance we get the better is our magazine. Looking back through past years we must frankly admit that some of our assistants have not pulled their weight. Maybe they have not been able to for certain reasons, but surely out of some 2,000 hams in Australia these few are a small minority? We always did loathe the idea of appealing for support and yelling out for technical and other contributions, but necessity is the mother of invention, and we few members of the magazine committee are not born inventors! It should not be necessary for us to do more than our share of work in giving you this magazine, and we know you would not expect it; but just let us say that it is a hard row we are hoeing. Why not push the pedal a while, so that we may take a turn at free wheeling?

What do you think of our three new sections—the DX, Country, and the Question Box? We may have had a couple of dozen comments since their inception, but not enough to let us clearly see the result of the innovations. Maybe you can suggest improvements?

When we first thought of this magazine, it was never intended that it should be a world's leading technical authority, but just a publication that would provide the missing link between our members—the link of unity. It has proved itself to be a collecting medium for lots of experimental work, the publication of which has been of great value to many. Thus, why not concentrate on such an object? There is a host of discoveries yet to be made on 56 mcs, and it is only by united efforts that we can succeed. Maybe you don't think this band will be any good for DX, or, then again, you may be very optimistic about such a prospect? No two hams think quite alike, and we see no reason why each should not express his views on paper for others to comment on, for or against, and, at the same time, express their opinion. This is the reason for the opening of the "What do you think?" section this month. It is meant purely for 56 mcs discussion. Are you of the opinion that the secret of this band lies in the transmitter, aerial or receiver? We invite you to contribute your thoughts on the matter, and maybe we will get something out of the issue. What do you think? Oh! We nearly forgot—Merriest of Xmases, gang.

An Ultra High Frequency Portable Transmitter

(Extracts from the winning entry for the Gadsden Trophy Contest, 1937.)
(By Vaughan Marshall, VK3UK.)

The object of the Transmitter portion of the entry was to design a simple and efficient portable transmitter that would, at the same time, be economical in power supply, compact and stable.

Experiments were made with various types of circuits in use on the U.H.F.'s, including the TNT, Oscillator-Doubler, MOPA, High C type, etc. The standard of comparison was a push-pull transmitter using parallel grid and plate lines. The outcome of these tests showed that the High C type, whilst being as simple in design as the TNT, gave a measure of stability approximating that of the known stable types, provided certain precautions are taken. In fact, later tests with the final design, correctly adjusted, in collaboration with VK3ML, whose super is far and away the best of its type in VK3, showed practically no noticeable frequency modulation. Whilst it is admitted that in accepted phone practice modulation of an oscillator is taboo, this High C type is no ordinary oscillator, and also it must be remembered that the requirements of portable gear demand different treatment to that designed for home working. Here the endeavour is to attain the maximum possible stability and output from the minimum amount of gear and power drain, so as to be able to put out a phone signal from a field location that would be perfectly readable on a reasonably selective superhet receiver.

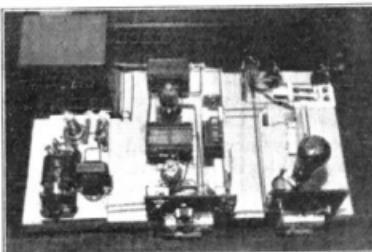
The outfit described, in addition to fulfilling the requirements mentioned above, has no tuning controls, merely an ON OFF filament switch and a modulator gain control to be touched on location, only requires a 6-volt accumulator to be plugged in one end and the antenna feed line at the other, measures only 20" x 10" x 7", and weighs only 20 lbs.

complete with modulator, audio oscillator and the heavy duty vibrator unit.

Oscillator Considerations.

An E408N valve proved the best oscillator of types '45, 2A3, '71a, '01a, E408 tried.

The condensers C1 and C2 are made up in a similar manner to those described in "Radio." Two pieces of 14# aluminium, 3" x 3 1/2", and one

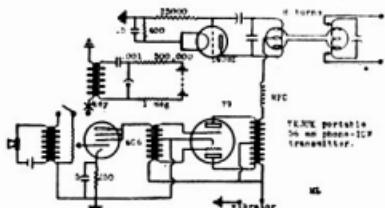


piece 2" x 3 1/2" are each bent to provide a 1/2" flange, which is slotted near each end so that about 3-16th inch play is possible when the plates are mounted on midget stand off insulators. The two larger pieces constitute the plate condenser, and are mounted about 1/2" apart. The smaller piece is mounted about 1/8" away from the "floating" or middle plate to form the grid condenser. About 2 1/2" is cut out of the centre of the flange of this "floating" plate so that the grid plate will fit snugly in place.

Adjusting the circuit for maximum output inevitably leads to frequency instability, and the RF grid excitation must be controlled with due regard to BOTH stability and output. By that it must not be inferred that the grid excitation must be cut so far back that poor output results, for, on the contrary, adjusted for stable operation the output is com-

parable to that of any 56 mc. oscillator under equivalent conditions. The best setting of the plates proved to be a 3/16" separation of the plate "plate," and just less than $\frac{1}{4}$ " separation of the grid plate. The coil consists of 7 turns of 14# tinned wire $\frac{1}{2}$ " in diameter and spaced to $1\frac{1}{2}$ " in length. It is mounted directly on to the stand off insulators supporting one end of the plate "plates." The RFC is an Eddystone UHF choke.

Antenna coupling was found to be of the greatest importance if the stability attained was to be retained. Link coupling from the coil to an aerial coupler was used, and provided the necessary flexibility to allow for maximum energy transfer consistent with stability to be obtained. A one turn link bent slightly off centre was used at the coil end, and the aerial coupler consisted of four turns of 14# wire 2" diameter with a one turn link and tuned by a 25 m.mfd. condenser. The two wire feed line is clipped on to the coil to obtain the desired impedance match.



The Modulator.

A class B unit was decided upon firstly because Class B will give greater output for given valve types than Class A, and secondly because, unlike Class A, with its steady plate current, the "idling" current is reasonably low, and the average plate current is proportional to the exciting voltage. Thus, at a pinch, B batteries could be used for operation.

The first set-up was a 6C6 connected as a triode feeding a 6A6. The advantages of a twin triode from the point of view of filament supply economy was obvious, and as the 6A6 was on hand it was tried first. This valve was subsequently changed to a 79, because the plate current drawn whilst "idling" was lower than the 6A6. With a plate voltage of 320 the audio output is

of the order of 12 watts, which has proved ample to modulate the oscillator at any power likely to be used from a field location.

The Audio Oscillator.

It is fairly obvious that the chances of an ultra high frequency contact over record distances are many times more favourable with an ICW signal of carefully adjusted pitch, than with speech. Thus the addition of an audio oscillator was considered essential. The salient difficulty was that an ordinary oscillator required the addition of either another A and B supply or additional drain on existing ones. A note in QST by Fred Schnell, W9UZ, gave the germ of an idea which has been developed into the ultimate in simplicity and economy in audio oscillator design for portable work. The "nerve centre" is a small neon bulb pilot light which will oscillate with a minimum voltage varying between 90 and 150 volts, depending on the type used. The current drain is less than 500 micro-amps, thus the new extra light duty B batteries are ideal as the power source, and their life will be almost equivalent to their shelf life. It is of interest to note that the oscillator output remains practically constant whether the bulb shows just the faintest orange tinge or whether the voltage is raised to make the bulb glow brightly. Of note, also, is the fact that the bulb will only oscillate when inserted in the socket one way, so if any trouble is experienced the first test is to insert the other way.

The frequency of the note can be varied by:—

- (1) Increasing voltage, which increases frequency.
- (2) Increasing resistance, which reduces frequency.
- (3) Increasing capacity, which reduces frequency.

Or
vice
versa.

One of the old type variable grid leaks is an ideal method of changing the frequency of the note, which should be adjusted to approximately the desired pitch by capacity and/or voltage variations, and then making any vernier adjustment desired with

(Continued from page 8)

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DX Notes

by "Snow" Campbell, VK3MR

Introduction.

These notes leave on the 16th of each month, as they have to be in the hands of the printer by the 18th, therefore all notes are gathered over a period between the 16th of each month. All times are in Eastern Australian Standard time (10 hours ahead G.M.T.). Although this page is mainly devoted to DX notes, conditions, contest scores, and hints or advice on how to improve in those departments, I feel that to drive home certain points I must appoint myself as censor of ham band morals as well as be T.O.M. and Uncle Tom all rolled together. So look out, someone!

Fortunately, I am not writing these notes straight after the Junior VK/ZL contest, while everything is still fresh in my mind, because I am afraid it would shock the editor as tough as he is! The tortures I had in mind for certain stations would have made T.O.M. turn in his grave. I have cooled off now, and look back with a sigh, and just hope for some improvement in the future. More later.

Fan Mail.

My plea in last month's notes was not in vain, as I have received many letters from hams interested. I cannot answer them all personally, as much as I would like to, so I take this opportunity of thanking them. Write again, chaps. Several very interesting questions have been asked, one being, "What IS DX?" and the other, more involved, "What is the best spot in the band?" I will answer the second one later, as it would fill up the whole page, but cheer up, as there is a **BEST** spot and spots! The first question boils down to this, "What is DX to one ham is local to another," and any success or otherwise is due to your aerial and the geographical situation in respect to the other countries (also more later). "DX" is any station outside Australia (even ZL is

DX on 5 mx). Anyone who can work a W1 is putting out a signal as there are not many countries further than that, yet we do not rave about working a W1. It seems to be the rarer countries where there are only a few stations active, and where there is a sole representative. The nearer stations are the hardest to work, especially during a contest. As South American stations are the hardest to contact, especially from VK6, they are considered real good DX. Also South Africa for the benefit of VK7's. Of course, W1 is good DX, with extra grp.

VK/ZL Junior Contest.

Conditions were bad enough the first week of the junior test, but were at their worst during the second week. Despite the poor conditions some real good DX was heard and worked, the most sort after being HC1JW and OA4J. Both were coming in solid for hours on end, commencing about 4 p.m., and fading out about 7.30. OA4J.T9 on 14410kc. HC1JW was hard to find by many, and no wonder, as he was about 50kc out at the HF end of 14 mc. T9.R6/7. Both tune from the HF end of the band, and actually tune from about 50kc out. Before they really listened in the band they worked dozens of VK and ZL's. Some who were worked before listen-in the band were VK2XT, VK3ZR, VK3NS, ZL2QA, and many others. VK4GJ won the race to 28 mc, last heard of passing by 19 metres, and I suppose he will get a mention in the 28 mc notes by 3CP! LY1X, R7.T8 also out about 144070kc. The most consistent station heard out of band being ZL2QA.R8/9.rac rippy. Heard him after the test on same freq. with pure T9XV. That part of the spectrum above 14400kc is a wonderful hunting ground for rare stations. I know we shouldn't work these stations that are out of the band, as it is the only cure not to work them but, what to do in a contest? J8CD both ends of the phone band. J 8, a new country,

not Japan, but Chosen Is. Japan proper is J 1 to 7, and J9 is Formosa. SV1RX, floating around the HF end, tunes from the end—variety of notes, some approaching T6. He is good op, and uses all bands. Conditions for Europe were NG last day, as none were even heard, but they were found later on 28 mc from 7 p.m. on to 11 p.m. Most every European country was on the job. After going through the qrp test, when conditions were at their worst, I have as much confidence in the 25 watts as in 200. So there is still chance for the qrp man, even if he uses zepp feeders, as I have been getting good reports from W8, using half watt 100 volts at 5ma, so you can see that the big loss in zepp feeders can't be so bad after all in practice. Only junior score known is 3 MR, 33,000.

General Notes.

VK3FF getting amongst the DX now. Worked YM4AA at LE end 14 mc; heard HO2U (ho to u), gave his qra as China. Anyone else hear him? Might be one of those chaps like DX4U or DX2U. 3CX now worked 108 countries. Any better? Fone? 3CX wants to know how to get cards from stations like VP7NS, VP9R and ZK1AB. Who said work them? Sit down, Allan! Keep an ear on HF end of 14 mc for CX1CG, watery sig. on most nights, but every Sunday up to 9 p.m. 3KX has worked 28 (only) South Americans on one and 100 Europeans since 1st Oct. Likes the two half waves in phase better than the popular W8JK ant. VK5 chaps made merry with LU8EN on last night of senior test. T9 14070kc to 9.30 p.m. It's worth losing a bit of sleep early Sunday morn if you want to get dozens of European stations who are not as a rule on at any other time, and it is Saturday afternoon over there. Monday morning is better, as it is Sunday afternoon in Europe and the band is most active. One rare station heard most a.m. is YI2BA in the phone band, T5. From midnight to daylight all Africa, Asia, and Europe can be worked with the greatest of ease. Try it.

Conclusion.

Conditions generally are not the best on 14 mc, but many good bags are obtainable by sacrificing a few hours of sleep. 7 mc will be coming

to its own after sunrise. The type of information I require for these notes is the stations heard, time, freq, and any tit-bits about them.

(Continued from pag. 5

the variable grid leak. The constants shown gave a clear, crisp, penetrating note that would "pierce" super regenerative hiss excellently, but individual bulbs may possibly vary.

The output is fed through a transformer to the grid of the 6C6. A SPDT switch throws in either the microphone or the audio oscillator, and the modulator gain control can be used to adjust the audio oscillator output to the desired level.

The three units, the oscillator, the modulator, and the audio oscillator are mounted on a base board 20" x 10" x 7", together with the vibrator unit, which is heavily cushioned with Dunlopillo. The unit has been laid out breadboard fashion because all operating is done on field days from the car, using the car battery for the primary supply. The breadboard used fits snugly on to the bag rack at the rear of the front seat of the V8, and as the battery cable is permanently available there the only job to be done when arriving at the site selected is to hoist the antenna and plug in the 600 ohm line. An Eddystone telescopic aerial is carried, and can be screwed on to the back bumper for short distance contacts, but despite the fact that it is in no wise a portable aerial no comparable type to the Bruce has yet been tried if record breaking is the object of the test.

This outfit provides a really efficient portable that is compact, light and rugged, and whilst being very economical in its power supply requirements, gives a signal of a quality and power output that compares more than favourably with the average home UHF transmitter in use to-day.

**SUPPORT YOUR
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The Wireless Institute of Australia Federal Executive

The I.R.E. Trophy Contest.
Organised and Managed by F.H.Q.

Following on the success and popularity of the recent "All Band CW Contest," and in view of the forthcoming 150th Anniversary of Australia Celebrations, the Federal Executive of the Wireless Institute of Australia has arranged a further contest, which will take place during the last two week-ends of January, 1938.

This contest will be open to every amateur in Australia, to all of whom, on receipt of their logs by this Executive, will be forwarded an attractive certificate. The winner of the contest will be presented with a very fine trophy (value twenty guineas), which has been very kindly donated by the Institution of Radio Engineers.

In this contest there are two sections, one of which may be called the "Qualifying Section," and the other the "Contest Proper." For those amateurs desiring to compete for the trophy it will be necessary for them to send the message given below to at least ten different overseas countries. When this has been done, they become eligible to compete for the "Trophy" in the second section of the contest. Plaques symbolizing the 150th Anniversary of Australia will be presented to the three overseas amateurs who receive the greatest number of these messages from Australian stations. Australian amateurs who are not able to send the message to ten different countries are not barred from entering the contest, but will not be eligible for the I.R.E. Trophy.

In order to minimise the number of operating hours in the contest, and at the same time give the equivalent of twenty-four hour operation, the two operating week-ends are being run in the opposite sectors of the day. This should be appreciated by entrants using 160 metres. Every amateur is urged to enter and make this contest the most successful of

its kind ever held in the Commonwealth.

RULES.

Qualifying Section.

1. To become eligible to compete for the I.R.E. Trophy, participants must send the message given below to at least 10 (ten) different overseas countries during the period commencing 0001 E.S.T. December 1st, 1937, and ending at 2400 E.S.T. January 20th, 1938.

The Message.

2. "Australia's 150th Anniversary Celebrations commence at Sydney, January 26th, and continue to April 25th. Spectacular and varied programme for overseas visitors. World Radio Convention, during Celebrations, commences April 4th. Those interested cordially invited to attend. Please relay and publish.

(Signed)

LYONS, Prime Minister of Australia;

STEVENS, Premier of New South Wales."

3. Entrants must forward a log giving the following particulars:—
 - (a) Call sign of overseas stations receiving the messages.
 - (b) Time and date of each message handled.

Contest Proper.

1. The Contest is open to all licensed amateurs in Australia, but only those amateurs who have handled messages in accordance with Rule 1 of the qualifying section will be eligible for the I.R.E. Trophy.

Amateur Radio

2. The times of the contest are as follow:—From 12 midnight, Saturday, 22nd, till 12 noon Eastern Standard Time Sunday, January 23rd, and again from 12 noon E.S.T. Saturday, January 29th, till 12 midnight E.S.T. Sunday, January 30th, 1938.
3. The test is of a contact nature, and with each contact a 10-letter cypher must be exchanged before a point is scored.
4. Stations with which an entrant can work are stations in Australia and New Guinea, outside the competitor's own State. When such a station is contacted and cypher exchanged, one point is scored. If there is no exchange of cypher, no point may be claimed.
5. Any station may be contacted once on each band each weekend.
6. States are as follow:—VK2, VK3, VK4, VK5, VK6, VK7, and VK8/9.
7. Licensed power must not be exceeded, and infringements of the P.M.G. regulations will mean disqualification.
8. One point is scored for each cypher exchanged. The total points are then multiplied by the number of States worked (as defined in Rule 6).
9. Bonuses will be added to the score after multiplying (Rule 8), as follows:—
Contacts on 160 MX—50 points for each State worked.
Contacts on 80 MX—20 points for each State worked.
Contacts on 40 MX—20 points for each State worked.
Contacts on 20 MX—30 points for each State worked.
Contacts on 10 MX—100 points for each State worked.
Contacts on 5 MX—500 points for each State worked.
The sum of bonuses plus those points scored as in Rule 8 will constitute the grand total score.
10. The cypher to be exchanged consists of 10 letters, the first five being chosen by the entrant, and to be used as his identifying letters throughout the contest. The remaining five letters are to be the first five letters of the last station contacted. The initial cypher should consist of the five letters of the originating station, plus five "A's," i.e., RADIO-AAAAA.
11. All logs must reach the Federal Executive of the Wireless Institute of Australia, Box 2127L, G.P.O., Sydney, by February 28, 1938. The logs must contain: (a) Time, date, and call sign of each station worked; (b) cypher sent and received at each contact; (c) points claimed, contact points and bonus points.
12. Certificates will be sent to each participant who forwards a log, whilst the Australian-wide winner will receive the I.R.E. Trophy.
13. The decision of the Federal Headquarters executive of the W.I.A. will be final and binding in all matters.

The scoring may be a trifle complicated, so a formula has been arranged which should clear up any misunderstanding.

The grand total score equals:—

$$(A \times B), \text{ plus } (50C \text{ plus } 20D \text{ plus } 20E \text{ plus } 30F \text{ plus } 100G \text{ plus } 500H).$$

Where A equals number of contacts.
B equals number of States worked.
C equals number of States contacted on 160 MX.
D equals number of States contacted on 80 MX.
E equals number of States contacted on 40 MX.
F equals number of States contacted on 20 MX.
G equals number of States contacted on 10 MX.
H equals number of States contacted on 5 MX.

The above formula will give the score claimed by any station in the contest.

E. L. COLYER, VK2EL,
Federal Publicity Officer,
Wireless Institute of Australia.

5 MX FIELD DAY.

Details of VK3 arrangements for the 5 mx Field Day, which coincides with the National Field Day contest, will be found in the UHF Section Notes.



Federal and Victorian Bureau

(R. E. Jones, VK3RJ, Qsl Manager.)

VK3NP is keeping most of the Malvern and Glen Iris gang off the air these days. BCL repercussions are bound to follow very soon.

Another old-timer to stage a re-appearance is Val Petruchina, VK3DT, with a note and fist as of yore.

Quite a budget of news from Roger Greene, VR1AM, of Ocean Island, who is active again on 40 metres after a year's cessation. Roger will soon be heard on the LF end of the 14 mc band. Next year his furlough is again due, and he expects to arrive in Melbourne around August. Says 40 mx not so hot over there, but 20 mx excellent. Adds that it is difficult to keep cool over there, and sends his regards to VK3WG.

John Mills, VK3QB, of Maffra, has been transferred to Moe, from which locality his signals now reach R9 in Melbourne.

OZ4B, E. Chr. Anderson, Fredericiagade 88 (2), Kobenhavn K., Denmark, requests me to publish the fact that he will exchange postage stamps with any Australian ham.

Will someone please send VK3CX a Delaware card. He needs one so badly that he brought a bodyguard consisting of VK3IW and VK3CB to the QSL Bureau on Cup day, to obtain one by fair means or otherwise. The QSL Manager was away at "the Sunday school picnic"!

I regret the injustice done to the N.S.W. State Council in a previous issue of "Amateur Radio," by stating that F.H.Q. was staging a big DX contest in 1938. It transpires that the State Council has the control of this mammoth contest.

QSL Managers please note the new Bureau address for the Dutch East Indies—QSL Bureau, N.I.V.I.R.A., Post Box 64, Bandoeng, N.E.1, Java.

Will the pirate using VK3BG as a call sign please visit Bendigo to receive the kick in the pants which Roth Jones has awaiting for him.

W9EF, Bill Short, of 104 157th St., Calumet City, Ill., U.S.A., moans about the poor response to his QSL's from VK stations. Claims that he has sent 100 for a meagre 27 in return.

Cards for the undermentioned may be had on application at this Bureau, 23 Landale Street, Box Hill, Victoria:—VK3AP, AQ, BJ, BE, BX, BS, CA, CU, CV, CX, DI, DK, DS, DU, EA, EH, ES, EZ, FA, FM, FS, FT, GB, GJ, GM, GP, JN, JR, KG, KP, KT, LV, LQ, NC, NG, NI, NP, RE, SF, SS, SO, ST, TB, TG, TQ, TW, TY, UJ, UO, UF, WB, WH, WR, WW, XD, XE, XG, XJ, XU, XZ, YA, YM, YG, ZG, ZP, Ashman, Webb.

Qra of following is needed:—VK3EE, QO, TT, WU.

Bright Star Radio, VK3UH

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56 MC! What do you Think?

VK2NO's ideas on the subject are as follows:—

"The main trouble with the speedy development of communication on this relatively neglected band (in VK) is the lack of incentive it holds for any than the genuine experimenter, to whom obstacles are made to be overcome. This band will not readily attract the dabbler, at least not in its early stages, although in years to come when more is known about its behaviour, one may correctly assume that it will become more populated. To most dabblers the 56 mc band is a solid wall of doubt, fraught with what appear to be difficult technical problems in the way of getting results. Because one cannot pick up a mike and yarn away at once with W's on phone, the more recent initiate into amateur radio thinks, 'What's the use?' It appears to be all wrapped up in the matter of DX working, but there is much more to the 56 mc band than that, attractive as the ultimate DX problem is. To the experimenter there is the sheer joy of making things work well at the frequency, and the joy of making things work in amateur radio is, or should be, nine-tenths of the interest in the game. Before DX is attempted on 56 mc, there is the question of building apparatus that at least conforms with lower frequency standards. Nobody in their senses would dream of using a modulated oscillator and squegger receiver on 40 or 20 metres in these times, and there is no technical reason why these inflictions should be applied to 5 metres. It is just as easy to build a stable MOPA for 5 as it is for lower frequencies, and a TRF receiver is also no problem at all. Neither for that matter is a superhet. The first thing, then, is to tackle this TX and RX business from the barrier, and not to plug along with ancient gear even temporarily. Such practice will get the user nowhere, except locally, and relatively unsatisfactorily at that. If you have a TX capable of radiating a stable C.W. carrier, it can be keyed for C.W. communication, which is the

first important step. Applying modulation for speech is the same thing as with any other TX. If the RX will handle C.W. well, it will receive weak phone into the bargain, but just try to copy a distant 56 mc phone on an R3 carrier with the average super-regen! It can't be done. Modern valves make even a crystal TX readily accessible on 56 mc, and if you can't run to acorns in the signal circuit of the RX, well, there are metal valves of the 6K7 and 6J7 variety which are about on a par up to 70 mc. Aerials! Here lies a wealth of pasture to graze in. A lot is known about directive systems, but relatively little is known about the useful angle of radiation for extreme DX under favourable ionosphere conditions. But it will become known eventually. The progressive station should have a good vertically polarised directive system with reflector for local work up to 100 miles or more, and an experimental horizontally polarised system for angles between 3 and 20 degrees for DX tests. If the latter can be moved around also, so much the better. The all-important factor, having the previous considerations established, is co-operation. If tests are organised between States or countries, don't promise to take part unless you will definitely be ON THE JOB at the arranged periods. Remember that 10 metres was a closed book for years, and that it was only due to the constant and at times disheartening work of those who stuck to their guns and kept stations on the air that the DX periods for the band became known. Once they were established consistent DX followed. It is a certainty that there are DX periods for 5 metres, but they will only be known after stations break down the silence in various directions. Automatic CW or ICW senders are not hard to make and well worth installation. You can keep your station going for 15 minutes, then listen. If nothing eventuates, don't lose heart, but put the TX on again,

(Continued on page 9.)

Wireless Questions

2. WHAT IS THE FUNCTION OF THE "BRUCE" AERIAL?

- (a) The Bruce aerial is said to possess the property of radiating strongly in a direction at right angles to the plane of the antenna. Why is this so?
- (b) If such an aerial were erected for operation on 20 metres, what would be resulting wave pattern when used on 40, 10 and 5 metres? It is assumed that the method of feeding the aerial will be by a matched impedance line to the centre of the aerial. At the same time what will be the current distribution in the wire at the wavelengths stated above?
- (c) What is the function of the eighth wavelength sections at the ends of the array?

Answer to Problem Two

(a) The principle upon which all types of directive antennas operate is that it is possible to arrange a series of half-wave antennas in such a physical relation to each other that the fields they produce when excited combine in some direction, and cancel each other in other directions. This process of combination and cancellation depends both on the distance apart of the half-wave wires and the phase relations of the current in them.

The Bruce antenna is so designed that the exciting currents are in phase in the vertical sections and

out of phase in the horizontal sections. This relationship can hold good only if the antenna is excited at the frequency for which it is designed. Hence, at this frequency specified, the phasing of currents in the vertical sections results in strong broadside radiation from the antenna and a virtual cancellation of radiation from the ends.

(b) At multiples or sub-multiples of the fundamental frequency of the antenna, the field would in general consist of a complex series of lobes in both horizontal and vertical planes, and no effective concentration would be achieved. The current distribution in the antenna at multiples and sub-multiples of the fundamental frequency can be ascertained by drawing the antenna to scale and drawing upon the wires a series of sine wave patterns (also to scale) corresponding with each frequency.

(c) The eighth wave-length sections on either end of the antenna are placed upon it to provide that each half of the antenna on each side of the point of excitation (the stub in the case you cite) is an exact number of quarter wave-length. It is necessary that each side of the antenna should contain an exact number of quarter wave-lengths, partly to achieve the desired phasing of currents in the wires, and partly to ensure that the antenna will be resonant on the wave-length of operation.

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28 and 56 M.C. Notes

(A. Pritchard, VK3CP.)

Conditions on ten metres have been excellent for all continents, and signals from varied distances have been similar strengths for many hours at a time. Skip distance effects seem to indicate many angles of reflection and refraction; for instance, VK2UC's phone is r7 at 2 p.m., with many W7's the same strength. We hear many Europeans r7/8 qso W's. At 3 p.m. on Sunday, 31st October, VK3YP contacted LU3DH on r8 phone for a half-hour contact. TI2FG, in Costa Rica, contacted 3MR, 3BQ, 3YP and 3CP the same afternoon at 2 p.m.; TI2FG phone was r8, and gave us similar reports. He is using a Collins 30 FXC rig having a 201 tube (Collins) in the final with 150 watts modulated by Class B '03A's. VK3YP has a W8JK beam on Europe and South America; the results are all that could be desired, the LU3DH contact proving this. This beam has four half waves in phase, spaced only an eighth wave length, horizontally erected (giving only vertical radiation), fed with a $\frac{1}{4}$ -wave stub and matched feeders. There are many W sigs at good strength around 7.30 a.m., the best being W3CDT, 8QLK, 8NK, 2AOG, all r8 phones. One of the best cw stations is W6GCX; he is using power, 15OT final, 1kw input, and a vertical antenna. At VK3BQ Max has good contacts with Europe, the best being OK1FF, G2CX, ON4NC, G6IR, G5HZ, GM6NX, PA0WL. W6LLA is using two Taylor T20's in PP in his final; he had his first contact with 3BO. This T20 has been given a thorough try out at 3BQ; compared to the Eimac 50T, there is little difference, apart from re-neutralizing, with power output and over all efficiency, using 900 volts on the plate! Many European sigs have been at their best from 11 p.m. until 1.30 a.m., although OH2NB qso'd VK5HW on the 20th October, giving him 579x at 8.45 p.m.; G6DH, G2IT, F8EO, G2PL, G5QY, 58MS are also heard between 7 and 9.30 p.m. At the later time, i.e., 11 p.m. till 1.30 a.m., OZ3DJ, G2TK, G2IT, FSRR, SV1RX, G2YL,

ON4NC, ON4QX, G6IR, D4QEB, have good strength on cw, G6LK, G6DL, F8TI, r7 phones. OK2RM is the loudest European here at 3CP, usually r8/9, although his rig is very small, 59 ECO, 6L6G doub., RK 10 final, 35 w., 80 mx Zepp antenna, 2 tube rx. VK2's, 2TI, HZ, VN, JX, have been working many Europeans. VK2HZ qso'd OA4J, completing his WAC on 10. VK2RA also has completed his WAC on 10 with OH2NB. His rig has a 6L6 with 40 xtal, 6A6 push-push, a pair of 6L6G's in push-push, doublers, 808 final amp. VK4AW and 4WH are doing excellent work for VK4; the former's rig has a 2A5 co tritett, 80 xtal, 2 46's doublers, 807 final, 20 watts modulated by a pair of 50's, Zepp antenna does a good job; he has qso'd all States on all bands now. VK2UC has also been doing well; his rig has 59 tritett, 46 doub., 6L6 doub., t20 final with 20 w modulated by class ab 2A5's. This phone was r8 during a qso here at 3CP at 2 p.m. Sunday, 14th November, during a very short skip. VK7AB has fb sigs. VK3iW has a nice output on 10, and is receiving many DX contacts; the RK20 final, with 100 w input, is driven by a 6P6 tritett, 6L6 doub. The Jones all band antenna drawing well on 10 (single wire feed). SM6WL's phone was r5 at 3BQ during a qso with 2GU on 14th November. We are becoming accustomed to hearing many W's after midnight. W2BQK, qso SM5ZF, W2AiF qso EI5F, W3GAU qso PA0WL, at app. 1 a.m. Sunday, 30th October. W1iY phone r6 at 1.45 a.m., W2GMM r5 1.55 a.m. on 14th November. An interesting contact for VK is from KA1YL on the yacht "Latitude," in the China Sea. He has a wonderful portable rig, with plenty of power from a pair of 100 TH's in the final, another pair in class B as modulators. He had a good contact with VK2ADT, who is using a 801 fully modulated. The most consistent K6 station is Smitty, of K6MHY, who has PP 42's and 40

(Continued on Page 28)

Divisional Notes

To ensure insertion all copy must be in the hands of the Editor not later than the 18th of the month preceding publication.

N.S.W. Division

W. G. Ryan, Secretary, VK2TI, Box 1734 JJ, G.P.O., Sydney.

Country Zone Officers.

Zone 1 (Far West).—J. Perooz, VK2PE, Hope Street, Bourke.

Zone 2 (North-West).—H. Hutton, VK2HV, Byron Street, Inverell.

Zone 3 (North Coast).—R. J. Berry, VK2NY, 54 Bacon Street, Grafton.

Zone 4 (Hunter River and Coal-fields).—R. W. Best, VK2TY, 57 Hunter Street, Newcastle.

Zone 5 (South Coast and South-West).—R. Ross, VK2IG, 673 David Street, Albury.

Members of the Division are taking great interest in the National Field Day, and at least ten VK2 stations will be operating from portable locations. Most stations will have two or more operators, so that 30 or more members will be participating, and all are looking forward to an enjoyable week-end.

At the October general meeting Mr. D. B. Knock gave an interesting talk on Aerials, and pointed out the usefulness of the doublet type of aerial for reception and also for transmission. He discussed also some types of directional aerial applicable to amateur work on the H.F. and U.H.F. bands.

Some additional results are to hand for the senior VK-ZL contest, those most worthy of note being 2ADE, 83,000 points; 2DG, 33,170; 2ZC, 31,512; 2XT, 23,976.

Information concerning the junior section is very meagre, but it is believed that 2DG, 2HV, 2NY, 2PX, 2XT, and 2ADE put up good scores.

On 23rd October VK2NO was logged on 56 mc CW in Wellington, N.Z., by Mr. P. A. Morrison, who reported his signals QSA4 R4-5. This would seem to confirm the extraordinary results obtained in the northern hemisphere during May, 1936 and 1937, and the Division has organised 56 mc schedules with N.Z. amateurs in the hope that contact may soon be established.

The regularity with which European stations have been coming through during the evenings on 28 mc has encouraged quite a lot of activity on that band lately. 2UD is most consistent, and 2TI and 2ABC are also achieving fine results. Other stations using the band frequently are 2AHB, 2AZ, 2ED, 2HZ, 2JX, 2RA, 2VN, and, of course, 2GU, whose activities on this band are well known.

Members have been issued with attractive "stickers" commemorating Australia's 150th Anniversary next year, and drawing attention to the various contests to be held by the Institute during 1938. These "stickers" will be distributed to all Divisions for use on QSL's, and correspondence with amateurs overseas.

2TI had a phone QSO on 28 mc with PK3GD, who claims it as the first 28 mc phone QSO between PK and VK2.

The Division extends to all the best wishes for the festive season, with "bigger and better" DX for 1938.

STATION REPORTS.

2HV, with a rotary beam for 14 mc, is making a good showing in the Junior DX contest.

2PF.—On the air now in Sydney. Using cw and series modulated phone on his 210.

LAKEMBA RADIO CLUB—VK2LR. (By 2DL.)

At the meeting of the above Club, held at the Club rooms, "Sunrise Hall," Canterbury, on Tuesday, November 9th, the 50th licensed amateur was accepted as a member. Mr. C. Luckman, 2JT, a foundation member, was asked to take the chair for the evening. In outlining the history of the Club Mr. Luckman mentioned that it was very gratifying to have watched the Club grow from an original membership of 8 to its present strength of about 80. The low fees were one of the chief factors which helped to retain the membership, he continued, but unfortunately many members had dropped out owing to moving out of the district. From time to time the Club had been criticised for meeting at Canterbury, but as many members had several miles to travel each meeting a central position was necessary. The evening concluded with the serving of coffee and light refreshments.

ZONE 4 NOTES.

The first duty that confronts me is to wish all and sundry a Merry Xmas and oodles of DX in the New Year.

Now with that off my chest, here's the doings.

Another contest is in progress in the Newcastle district for members of the N.A.R.C., and judging by current reports there seems to be quite keen competition between about five men for the honor and the prize.

Due to a complicated and what seems to me unnecessary system of multipliers, the points to date amount to some half million or so "per person per trip," etc.

Had a visit recently from Bob Cunningham, 3ML, and walked him half round Newcastle, due to the poor tram service. Ask him about it! He bailed 2ZW and myself up in the shack of ZW for an hour or so telling us the worries of getting articles for "Amateur Radio." Poor chap, I pity him his job.

2XT and 2DG managed to dig up approximately 33,000 odd points each for the recent sections of the VK-ZL contests, and seemed highly pleased.

2LZ, from VIS, has come into our district, working at one of our local

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"B" class stations, but apparently his old "Lazy Lizzie" won't bring him as far as Newcastle. We never see him.

Hope to scrounge a couple of technical articles out of the local gang, but no promises. They're either as dumb as doorposts or as lazy as loafers. Well, cheerio for the present es. 73.

From TY.

ZONE 5 NOTES. (By VK2IG.)

VK2QE.—Put up fair total in test notwithstanding poor condx and good qrm from power leak. Got a few new countries, including V.O.

2OJ.—Not heard much. Too much business and holidays!

2AFD.—Contemplates moving to Junee; is just waiting for a call.

2VK.—Struggling with a 6L6G, out of which he gets a T.3 note. Is keen on borrowing power supplies to test it on hi!!

2IG.—Now has 6A6 S.E. osc. driving single 45 to a doublet. With 12 watts got three new ones—F.A.8, F.I.8, C.R.7—all T.9 xtal. reports!

2EU.—Worked some nice DX on 20, including H.O., but got tired and went back to 40. (The qrm there made us tired!)

2DN.—Mainly interested in five, and uses P.P. 45's there, but is also heard on 40.

VK2BW—Was tendered an fb farewell on the South Wagga Tennis Courts, and commenced "duplex work" shortly after. He will be QRT till study has been completed. The old brigade wonders how married life is, Alf?

VK2YW.—Is still on the hill, and may be occasionally heard on 40 mx fone, and is said to be rebuilding.

VK2JA.—Hasn't yet finished his receiver. In one fortnight Athol worked 40 Yanx on 20 mx fone. What's going to happen when he gets the new rx going, we wonder?

VK2AFF.—Didn't last long on the new rig. It's been rebuilt, and on chassis, too. Is it anything like 2WG, Phil?

VK2AEA.—Has been far too busy to be active at all.

VK2RH.—Well, well, well! After five years of silence Harry has got

going again, also on 40 mx. The final stage got damp during a severe rainstorm recently, and things happened when Harry unsuspectingly turned it on.

VK2FQ.—Has found that a 59 tritet doubling to 40 (80 mx rock) isn't sufficient drive for two 46's straight, so decided to build a buffer. By this Doc's log book ought to be nearly as large as his light bills.

VK2TH.—Faded quietly away from Wagga and landed in VIS. Roy has been heard starting up at his new abode.

VK2AEI.—Has been very ill, an operation was ordered and now after convalescing is on annual leave. By the bye, the "AEI" on fone sometimes heard on 40 is definitely a pirate, because Mo hasn't finished building his cw rig yet.

VK2AF.—Is building now that he is settled in Wagga, and indications point to Allen also starting on 40 mx. What a nice little 40 mx family Wagga is acquiring.

VK2AEO.—Still considering higher frequencies; expects to be on 20 mx soon. Has been too busy coaching Allen Wells and Stan Mitchell in code for recent exam., in which both appear to have done well.

VK2UO.—Hi Hi! But someone said that it's definitely to be revived, and Wagga's Club again put on the air. Whose move next, boys?

STATION REPORTS. (By VK2iG.)

VK2AEO.—Still using 59 EC 46 buffer and 210 PA., and has worked XU, VE, K7, FB8 and W on 40, using cw es T9, too! The antenna used being half wave Zepp.

Special for 56 M.C. Enthusiasts.

VK2DN. of Deniliquin, is using 45 osc. to a PP 45 PA on 56 mc. The antenna is a twin dipole. Special test transmissions take place on Saturdays at 2400 EST and on Sunday afternoons at 1500 EST, and the schedule is transmission for 10 minutes, then 5 minutes listening. This is repeated till 2DN drops off to sleep, hi! He wants others interested to listen for him and/or get in touch with him for skeds. He finds that the P.P. PA is much superior regarding stability than a single-ended job. Apparatus at this station includes E.C. fre-

quency meter and monitor signal generator and V.T. voltmeter. The receiver is 3 V super regen for 56 mc and 57 EC detector, and 1 audio for 40Q.

TASMAN CROSSED ON 56 M.C. VK2NO Makes Further Record.

Since receiving the report from North Wales of reception there of 56 M.C. telephony from VK2NO, Mr. D. B. Knock has been operating almost continuously in various directions with different types of beam arrays on C.W. telegraphy with automatic transmission.

His tests have at last borne fruit from New Zealand in the shape of a letter from Mr. P. A. Morrison, of 7 Essex Street, Wellington. Mr. Morrison is a S.W.L. with 21 years' experience in receiver design and use, and with a keen interest in ultra-shorts. He logged the C.W. transmissions from VK2NO on October 23rd last between 3.30 p.m. and 5 p.m. New Zealand time. Signal strength was Q4 R5 "CQ Five DX DE VK2NO." The report checks with the log and activity at the Sydney end. VK2NO was using a W8JK flat-top beam cut for 57 M.C. and used vertically, aimed North-West and South-East. Often is the S.W.L. decried for his persistency in sending along reports by the shoal, but here is a case where an S.W.L. has proved of immense value once again. Both the North Wales and New Zealand reception of 56 M.C. transmission from Australia come from S.W.L.'s. If listeners can do this, what about Hams? Surely two-way QSO's would be possible if the right kind of gear is in action at both ends during these DX periods on 56 M.C.? VK2NO has been making observations on skip conditions on 28 and 14 M.C., and considers that at the present time conditions should be very favourable, for up to 1,000-mile contacts on 56 M.C. The observations of W9FM in October "Radio" are worth perusing in this respect. It is significant that when VK2NO was heard in North Wales he was transmitting on a Reinartz type circular aerial, and that Mr. Morrison, in New Zealand, was using a similar aerial for reception. Evidently this type has the property of taking advantage of favourable angles owing to its circular shape.

Victorian Division

At the Council meeting held 9/11/37 there was an attendance of twelve. After accounts amounting to £35 14s. 9d. had been passed for payment, a comprehensive report was received from the newly re-organised Technical Development Section, and this section was authorised to purchase four new books for the technical library. After a general discussion on station equipment, it was decided that the 2KVA converter should be advertised for sale.

A report on the annual dinner was received from Mr. Marshall, who was thanked for the tremendous amount of work he had put into the organising of the dinner.

Mr. Thompson was appointed as manager of the coming A.O.P.C. class. Lastly, it was decided that a short report of Council activities should be published in "Amateur Radio"—hence the above effusion.

R. ANDERSON, Hon. Sec.

PHONE SECTION NOTES.

(By A. L. Johnson, VK3FL.)

On the 26th October the phone section held its meeting at the rooms of the W.I.A., and although rather poorly attended there were some interesting discussions on apparatus used in modulated transmitters. It was decided that the activities of the 200 metre section may be of interest and assistance to other members of the short wave phone section of the Institute, so that a series of lectures or demonstrations is to be held at future meetings on the last Tuesday in the month, excepting, of course, December. The first of these is to be a demonstration by 3HK of his Cathode Ray tube, on November 30th. This should prove very interesting, as many members are not as accustomed to these tubes as they may be.

The phone section was well represented at the recent dinner held by the W.I.A., and several members were lucky in receiving some of the gifts kindly donated by various firms and members of the Institute. Even our worthy friend, 3TH, came home with

a very decent trannie for his power supply. Altogether we had a very enjoyable evening. At the function just mentioned we had the good news from Mr. Malone that the Department had granted an increase of power from 25 watts to 50 watts, so most of the transmitters have been adjusted for the increased rating, and quite an improvement in quality and signal strength is noticeable.

As 3DH has been back in Melbourne some weeks his gear is almost ready to be put on the air once more, judging from the description the quality of his previous gear will be retained in the present and more up-to-date transmitter.

SHORT WAVE GROUP NOTES. (By O. E. Davies.)

Meetings held during October and November drew the usual attendances. A feature of the recent meetings has been the introduction of Morse Code Practice. This new departure has been very well received by the members.

At a recent meeting of the Group an interesting lecturette was given on the Fundamental Operation of the "Marconi Echo Depth Sounding System." This was well received by those who had the opportunity of being present.

It is felt that the presentation of lecturettes and debates does a great deal to stimulate active interest and experimentation within the Group. Remember, more of these talks and discussions are to be held; one on each meeting night is the arranged programme.

As regards the actual doings of the individual members, little can be said beyond the fact that those who are not studying for their A.O.P.C. are actively engaged in Receiver development.

The article on the 3WI Superhet, that has been promised for so long, is now well under way, and is in fact only waiting for a couple of photos, when it will be complete. You can definitely expect it next month, chaps.

Well, it is not my intention to take up any more space in this section of the mag., OM's, as it is my firm belief that the space so occupied could be put to better use for the

publication of technical articles. So in future these notes may be pruned a little finer each month.

UHF NOTES. (By 3JO.)

The Field Day to be held on 5th December is the most important item of news at present, and the arrangements governing activities are as follow:—In order to allow portable stations time to get their gear erected and tested, the starting time has been fixed at 1100 hours Eastern Australian time. However, all stations are requested to make every effort to have their gear in operation at 1030, when 3PS will call cq for ten minutes and will listen for replies at 1040.

Times for transmitting and listening periods are:—

1100-1110.—Country stations CALL Melbourne.

1110-1120.—Country stations LISTEN for Melbourne.

1120-1130.—Period for general contacting.

1130-1140.—All Victorian stations CALL Tasmania.

1140-1150.—All Victorian stations LISTEN for Tasmania.

1150-1200.—Period for general contacting.

These operations are repeated every hour until 1700.

Intending portable stations and locations are:—

3OT.—Mt. Tarrangower, near Maldon.

3OF.—Fyshe Creek or Foster, near Corner Inlet.

3DH.—On Great Divide, near Walan.

3VH-JO.—You Yangs Mts., near Geelong.

3QJ.—On boat in Port Phillip Bay.

3UK.—Olinda.

Country stations likely to be taking part are:—3HZ, 3RS, 3PR, 3DI, 3HL, 3RH, 3OW, 3HG, 3WE, and several stations in Melbourne, whilst in Tasmania 7KQ, at Mt. Wellington, and 7AB, at Launceston, will be keeping things alive over there.

Of the Melbourne stations 3PS will be the central control station, with dual transmissions on 7 and 56 mc. These 7 mc transmissions will provide a valuable link with country and interstate stations, and will enable them to keep in touch with

activity in the metropolitan area should the 56 mc channel be unsatisfactory. Other uses of this channel (7 mc) will be apparent, and need no mention here; suffice it to say that with this channel available there will be more chance of breaking records. In order to facilitate working over long distances, it is suggested that contacts, unless over 100 miles, should last no longer than 30 minutes. Given favourable weather conditions, 5th December should provide an interesting and enjoyable time for all stations participating in this Field Day.

All stations are requested to keep a log of stations heard and worked, and to send a copy of same to the secretary of UHF. Section, Victorian Division, W.I.A.

Activity on the 56 mc band has been improving, and during the last month stations 3VH, 3PS, 3LG, 3OJ, 3QJ, 3CC, and 3OT were contacted, and 3FH and 3XM heard only. This improvement is due largely to the

Field Day, and, as this is still more than two weeks ahead, it seems likely that 56 mc will shortly be the most popular band we have!

An exceptionally interesting time is assured for all who attend the December meeting of this section on Tuesday, 21st, so come along and hear just how these 56 mc Field Day records are smashed.

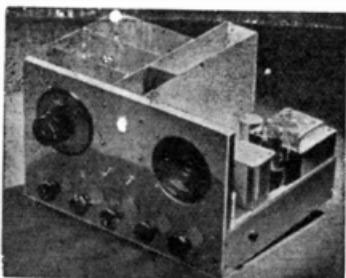
COUNTRY SECTION. (By VK3UK.)

We were delighted to see so many of the country men down for the W.I.A. Dinner, as it provided the opportunity to discuss the new section with some of them on the Sunday. From all that was said it seems that it would be a mistake to arrange any sort of gathering for the month of November or December, as so many of the boys in the Western and Northern Districts would be possibly too busy on their properties to attend. So it was felt best to arrange

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for a Hamfest at such a spot as Ballarat for about mid-January. That place would be reasonably central for both the Western and Northern fellows, and from the remarks heard many of them would be able to be present. Until we have had a meeting that is thoroughly representative of the country men it is impossible to finalise the definite lines of the Section Organisation, but it is felt better to hold the matter up for the few extra weeks so that a time that is convenient to all can be made.

Now for the Gippsland men. You fellows present a more difficult problem to get you together, as you are fairly few in number and are well scattered. I would like you to write to me and tell me where you consider would be a suitable place to have a meeting so that you can all attend without having to travel half way across the State. Would a place like Sale or, say, a spot nearer Melbourne, such as Warragul, be a good situation? And when would you like such a meeting? I can promise that our President and at least five members of the Council will accompany me to wherever you fellows agree would be a good meeting place. So drop me a line as soon as you can, giving me your views, so that we can have the matter in hand as soon as possible, for obviously the sooner the Section is under weigh the sooner you chaps will derive benefit from it.

SOME COUNTRY NOTES. (By VK3BG.)

Though the general opinion by many is that the country chaps of VK3 are a lot of phone hounds who interest themselves by talking over the back fence and acting the fool with each other, we have quite a few who are interested in the grand old "DX," and below are a few of the doings.

VK3HG.—Neil still as active as of old. Has a beam erected, and doing quite well. Worked several Europeans on phone, and did excellent in the contest, though, like many others, was unable to make WAC.

VK3OW.—Of late not so active, as he has taken up servicing now the AC has come to Coleraine. The DX is waiting for you, OM.

VK3KX.—Active as ever was. There seems always to be someone calling Ron, and glad to see you keep up the old tradition.

VK3GQ.—Interested mainly in phone these days. His limit seems to be the Yanks, as there is always one or more Yanks calling him.

VK3AL.—Another old-timer, and with plenty of power, his phone signals seem to get out swell. Hear you are contemplating the reserve, Alf!

VK3WW.—Wal still active on the DX, and many is the distant country worked by this comparatively old-timer.

VK3SE.—Not doing as much as you could these days, Stan! With your power, and two half waves in phase, you should be able to get out.

VK3FF.—Jock, like yours truly, passed the same exam. but twelve months back, and though for a while on qrp has now a bit of power and getting his share.

MALLEE AND NORTHERN DISTRICT. (3ZK—3HX.)

Well, gang, please accept our apologies for the absence of these notes for some time, because what with trips to VIM and er YLitis we're little bit hazy if the notes were even sent.

However, the high light of last month was the visit to Vim by some of the Northern boys, mainly for the W.I.A. dinner, and well—er—well?

Conditions, taking them all round, are not bad, but it looks like 80 mx has closed down for the summer months, and already practically everybody has migrated, although there are a few diehards, and the ZL's can still be heard. 40 mx has gained a few new members, while 20 mx appears to be opening up well. South Africans coming in very well, the Yanks being rather weak.

3EP is very QRL with Xmas shoppers, besides being kept busy by the gang grinding Xtals, 3BM particularly.

3TS -3FF are all band experts. It was rather a coincidence that the coils belonging to Tom's xmitter fit Jock's rig.

Amateur Radio

3OR got home safely from the city, and has not been very active since. Succeeded in getting a 6L6 tritet going, but the 40 mx rock didn't like it. Tough luck, Murray!

3KR also got home from VIM without mishap. Ken now has an 807 in place of the little old 210, but he can't understand why the plate doesn't get RED like the 10 used to.

3TL is another who arrived home from VIM but in this case we believe that Treb was loaded up with Xformers and one thing and another. Treb has installed a pair of 801's in PP as modulators, with excellent results.

3BM has had 3HK staying with him, and we believe that Keith put Bruce's oscilloscope in order and built his super.

3EC, Ernie Cook, of Swan Hill, is active on 80 mx.

3ZK still puts in an appearance occasionally.

3CE is not very active, getting near harvest time, and Roy chases DX from the seat of a tractor.

3WN is also more or less inactive, but Jack puts in an appearance on Sunday mornings.

3HR.—Charlie has just completed a new speech amp with 2a3's in the output, and the quality is rather good.

3K1 suffered a visit from 3BM, KR. HK. and TL, so we don't know if he can still get on the air.

3IH has rebuilt the rig, semi-base-board style, which looks very nice. Fenton has a CL4 give up the ghost, but now has another. The 2nd of May is becoming very proficient.

3HX is another who arrived home in good order and condition from Vim, and has since blown some filter, rebuilt the buffer stage, re-arranged the power supplies, and is now contemplating building another xmitter.

Queensland Division

(Via VK4AW-VK3ZC.)

Members at the November meeting had the pleasure of listening to a talk on Sound Picture Projection, very ably given by Mr. J. Bateman, of R.C.A. and Raycophone fame. The lecture at the December meeting is eagerly looked forward to, as Mr. V. F. Kenna is to talk on the Oscilloscope. It is hoped to hold a Hamfest

at some future date at Tweed Heads, with some VK2 hams from the Northern Rivers participating. Not for a few months yet though. Several of the gang will take part in the National Field Day, 4WI 4GU, 4RY, 4HR, and 4AW being listed.

Another DX contest has been and gone, leaving several bleak-eyed hams in its wake, notably 4JX, 4UR and 4UL.

4XN paid a visit to V1B, and talked 56 mc at great length. Using long line oscillator at present, but Eric says no DX.

Likewise among the visitors for the month was 3ML, but Bob's visits are all too short, and golfing seems to have an attraction.

Heard 4NO working VUL? Lady Elliott Island, on the Barrier Reef, on telephony. What's the dope, Norm? 4LX has closed down and shifted to temporary quarters, and does not expect to be on the air for quite a time.

4AP is back on after a long silence, and did a little in the contest, although only a reviver.

4CW is a new ham from Warwick, up on the Downs, and not a pirate, as some might have thought.

4GU has the new super working nicely after a spot of bother with the BFO.

4FB on a 6L6 modulator unit, although a little audio oscillation trouble is worrying Fred at the moment.

4HR quiet at the moment, but will break out at any time. Has his claim pegged out for the National Field Day already.

4EL still ill-treats the 45 tube with the hefty input.

4RF's pet pastime seems to be working Yanks on 14 mc by the number contacted.

Willie, of 4WT, has the 52 perking on all six working Europeans on 28 mc in great style. The line-up is 6A6, 6A6 push-push, 807 buffer, 852 final.

4AW reports working all VK districts on all bands and VK9 on 20 and 40.

4RY doing a little on 10 metres when time permits and the weather is not too hot. Expects to be in Sydney and Canberra with 4AW at Xmas.

4AX getting out on 40 and 20 fone, and uses CL6 tubes and 801 final,

and crystal mike ending with a pair of 6L6's in modulator.

4PX sticks to CW solely, and puts out a hefty signal, while 4YJ, nearby, is giving fone a flutter, using two 6L6's in parallel in final.

4BB seldom heard in V1B, but is on 20 nowadays, as hear other stations working him quite a lot.

QRN has been rather bad during November. 80 metres has gone by the board, and 40 has been slack during QRN periods. 20 seems to be the battle ground at the moment, and one might say slightly overcrowded at peak periods. Perhaps it is just as well that skip distance exists to lessen the QRM problem.

Most of the gang here view with favour the increased power permission, and quite a number have already taken advantage and increased accordingly.

South Australian Division

(By VK5KL, VIA VK3MR.)

Once again the majority of hams in this State were drawn together with that good spirit that prevails on such an occasion as the annual Field Day held in November. Manoora was the selected spot for this year, and the outing was enjoyed by all and sundry who journeyed to the northern town. More details in next month's notes regarding the transmitter hunt, etc. On Wednesday, 10th November, Mr. De Cure, VK5KO, of 10-metre fame, and possibly known better as VK3WL, gave a most interesting lecture on radio interference and ways of reducing it. At the meeting of October 27th a talk on his experiences in the Pacific was given by Mr. Bill Sawyer, ex-VPIWS. This was given in his best style, though one needed a big imagination to see in reality some of the feats accomplished by those daring the pacified waters of the mighty Pacific Ocean and its hundreds of islands. An outing has been arranged for January 12th for a visit to the model aeroplane club rooms, which should, as in the past, prove very interesting. Conditions on 20 metres does not seem to be as good as in the past during the spring months, though now the Yanks are fading out on fone, while the European DX is audible at the accustomed time of

around midnight, and then onwards. Several chaps have been gaining that elusive South American country during the evening on 20 metres, and many sighs of relief have been heard after having done so! Now that the festive season is drawing near, on behalf of VK5 I wish everyone a Merry Xmas, good hunting, and may the ham spirit flow forever free.—5KL.

VK5 COUNTRY NOTES. (By VK5PN.)

VK5BF.—Signaller in the Army during the war, Frank is one of those chaps who can work at radio all day (he controls a B-class relay station at Murray Bridge), and then find enjoyment in amateur radio as a hobby.

5HR.—Not yet quite satisfied with his Telefunken "fone." Although he gets out quite well, Bill is after results like unto those enjoyed by VK2DQ, with the same system.

5RE.—"Hobby" visited northern towns recently in capacity of delegate to a conference. Judging by his activities in various ham shacks, he must have neglected somewhat the real business of the conference.

5LC.—Won the Country Q.S.O. Contest with a total of 549 points. Congratulations, Les., you certainly worked hard to make the contest a real success.

5RJ.—Got away with the second prize. Guess Darcy now knows something about the taste of "ham-spirit."

5WJ.—Bill has been rather quiet for some time, but is now active again. I believe he could talk about antennae all day. He has tried all types, and although he admits that the Zepp is not renowned for its efficiency, he obtains real results with it at his Port Lincoln location.

5LG.—I received a most interesting letter from Leith recently, setting forth his delvings into the mysteries of our art. His old batteries have at last given up the unequal struggle, and before he could acquire (he did not commit himself as to the method!) new batts, he experimented with fair success with a Ford coil. Filtering the output, however, proved to be something of a problem. Leith has rebuilt his big transmitter in preparation for the advent of A.C. mains, which should eventuate shortly. The line-up is: TCO35/I.CO,

46 FD and a pair of E406's in parallel for operation on 7142 kc and 14284 kc. He will use the T.C.O. as a T.N.T. osc. on the 3.5 mc band. When fence is used the modulation will be of the grid bias type. Leith is a keen Rifle Club man, and would like to hear of other radio amateurs who are interested in rifle shooting.

5FB.—Haven't heard Frank lately. Possibly relaxing after his work in connection with the Q.S.O. Contest. He was assisted in the judging by 5NW and 2DQ.

Two new country stations have appeared in Mount Gambier. They are 5CJ (Mr. C. Ferguson) and 5BN (Mr. G. Barton). Both are on very low power, about four watts. Watch for them, please, chaps, and let them know how you receive them.

By the time these notes appear in print the big event of the year (I almost said "of all time"), the Field Day gathering at Manoora will have been held. On this day amateurs from all parts of South Australia, and doubtless some from other States, will have met and exchanged ideas. Chaps who have become acquainted

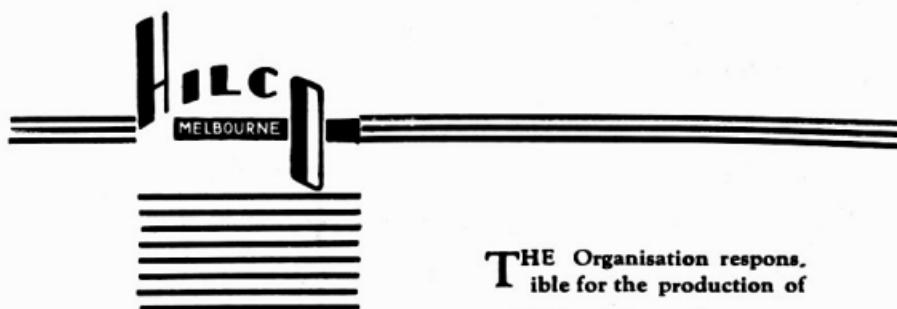
over the air will meet in the flesh and life-long friendships formed. City men will learn something of the country man's difficulties in regard to low power, lack of facilities for obtaining replacements, etc.; the country chaps will gain some idea of the tremendous difficulty of copying weak signals to the accompaniment of QRM, originating a hundred yards or so away in city shacks. Thus city and country will be brought closer together, and all will benefit from the greater appreciation of the trials and tribulations of fellows in all parts of the land.

Apart from any other outcome from the gathering such as this, anything which tends to prevent the development of a purely parochial outlook must be regarded as a most important result of a meeting of hams from far and wide.

W. L. PEARN.

Tasmanian Division

(By VK7DH, VIA VK3MR.)
The attendance at the November meeting did not come up to expecta-



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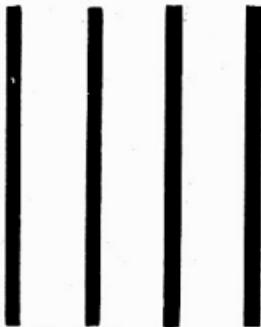
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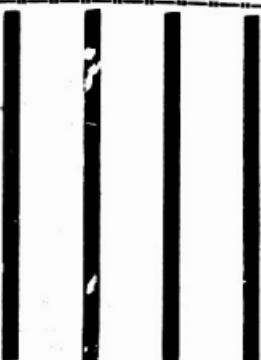
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Officer Commanding: Flying Officer R. H. Cunningham, 397 High Street, Glen Iris, S.E.6, Victoria (VK3ML).

District Commanders—

Second District, N.S.W.—A. G. Henry, Clareville Avenue, Sandringham (VK2ZK).

Third District, Victoria—Pilot Officer V. E. Marshall, 75 Argyle Road, Kew, E.4 (VK3UK).

Fourth District, Queensland—A. E. Walz, Sandgate Road, Nundah (VK4AW).

Fifth District, South Australia—F. M. Gray, 52 Ormond Grove, Toorak Gardens (VK5SU).

Sixth District, West Australia—Street, Kalgoorlie. 6Z1-VK6JE.—J. Elsbury, 24 Addis

Seventh District, Tasmania—R. Cannon, Goldie Street, Wynyard (VK7RC).

3rd District.

(3Z1—VK3UK.)

This month has seen a great deal of activity in many different directions. In the first place, we were delighted to have 3C4 and 3B4 down in Melbourne for the W.I.A. dinner, and to be able to take them around a few shacks on the Sunday morning. 3B4 came down with 3KX, and they had to return to Colac on the Sunday afternoon, so had to fill in as much as possible on the Sunday morning. 3C4, with a wife to look after now, did not have as much time as usual for radio, but we had the pleasure of a great yarn with him, as well as 3TL, 3AG, etc. The close approach of the National Field Day means that the testing of gear by the various competitors is becoming more energetic. 3B4, 3B2, 3Z1, and 1A1 are the known competitors amongst the Reserve members of this State, but there may be a few dark horses. 3B2, who will be working with 3B5, has a great location picked out on the highest hill near Coleraine, and 3B4, with 3KX, will be going across to Alvie. 1A1 will be going down the beach direction, probably to Frankston, and 3Z1 will be up in the hills at Olinda. No details of the gear of any of the others is to hand, each preserving close secrecy at the moment, but 3Z1 will be using a three-tube TRF receiver with 1C4, 32 and 30 tubes. The transmitter will be an 807 fed by a 6V6G. Operation will be on five bands. The aerials used will be an end fed one, three waves on eighty, as well as two twenty metre beams for 20 and 10.

By the time this appears in print

all members will have received the circular from the Air Board dealing with the suggested modification to the Reserve organisation. That is just the first leg of the new scheme that we have been awaiting with so much interest. Working with a Squadron, as we will, will provide just the variety that our present organisation cannot give, no matter how hard we try.

1A1 is back from his Interstate trip, and seems to have been dogged by floods wherever he went. He had a thoroughly good time, so that is the main thing. We missed him from the W.I.A. dinner, though.

3D1 is back on the job after a spell of illness. He finished up with German measles. Too much DX?

One very noticeable thing this year is that with conditions steadily getting worse on 80, the signals of 3C4 have remained at a good level all the time. Probably the change to the new house can account for an alteration to his antenna. Every now and then, though, conditions pick up remarkably for a short time. On 14/11/37, for instance, 3C1, who is never strong at 3Z1, worked up to R7/8 for about 15 minutes. 3B5 signals always are consistently strong, although often trouble is experienced in copying him and 3C4 on towards noon, because of the high noise level and QRM at 3Z1 location.

The trip of 3D4 up Nathalia way has been successful as far as 3C5 is concerned, for together they seem to have been able to eliminate most of the bugs in the latter's transmitter at last. 3C5 was back on the job on the 14th with a good strong signal.

(Continued on Page 13.)

tions, and to those members who did not attend we can only say that they missed a treat in the lecture delivered by Mr. F. W. Medhurst, dealing with his experiences in radio in the old days.

As this is the last issue of the mag. before Xmas, we take this opportunity of extending to all our heartiest wishes for a happy Xmas and a success in the coming New Year.

SCANDAL, VK7YL.—Heard on 20 metres now and again. Believe Joy had the hard luck to have a stick part in two while in the middle of hoisting it up!

VK7NG.—Putting out a wobbly signal on 40 metres from somewhere up near Waddamanna.

VK7JB.—Not heard on at all these days except when amusing bcls on 200 metres. Did I hear someone say that the love bug will bite you if you don't watch out?

VK7KV.—Never heard on either. Spose he will blow the dust off the ole rig and start pounding one of these days.

VK7XA.—Making whoopee with a TPTG. Worked 7DW, and had ole Bunny thinking. Thought he was a pirate! Good on you, Charlie!

VK7DH.—Hero of VK7! Makes skeds with 3MR to put through VK7 mag. notes. No notes, so Dave writes them himself!

VK7JH.—Believe Jack was down in Hobart on the 11th November. Heard him punching the key at 7XA. When are you going to get your rig going again, Jack?

VK3TS.—But 100 yards away gives Jock some QRM! Tom has now some rig, plenty of power on cw, and uses pair of 6L6's in his modulator. Let's know when you get WAC on phone, Tom.

VK3BG.—Active with a vengeance. Benn on qrp for the last six months, WAC and some rare countries to his credit. Thinking very seriously of building four-stage rig with pair of

Taylor T20's in P.A. Intends to meet VK7RC during holidays. Could not WAC in test. Who did? (3MR, several times Editor!) Hi Roth. inx.

(Continued from Page 12)

with possibly a change of aerial direction. The fact that VK2NO was recently logged in ZL was due solely to auto-sending throughout an afternoon. Why not determine that yours will be one of the pioneer stations to open the two-way 56 mc oyster? And, finally, don't forget that for cross city QSO's, nothing can hold a candle to 5 metres. Get that pal with whom you are in the habit of yarning to on 80, 40, or 20 a few miles away, to do likewise and get to 5 metres. It is worth it from the viewpoint of absence of static alone, and with a good directional aerial you will get a much stronger signal both ways, minus fading, than you can ever do at lower frequencies. Australia is an isolated country, far from the rest of the world, excepting ZL. Any DX records put up on 56 mc will go down in radio history. VK's have held a good reputation in U.S.A. for working wonders on 20 metre DX with 25 watts. Let us buckle to and show those overseas that we are on the job on 56 mc as well."

(Continued from Page 15.)

watts mod, by another pair of 42's. He is on the lookout for VK around 1.30 p.m. (has been heard here at 6.30 p.m., r6) during the week-ends. VU2AU and VU2SQ are heard often, although the former is the best, and usually on at 6.30 p.m. or 10.30 p.m. VK3ZZ has many w phones qso'd; we cannot hear him here in the city. VK2ADE had good contacts with G5BJ and ON4FB on Sunday, 14th November; VK2ABC has been heard calling cq 10. W6QG reports W6XOA on 54300 KC cc, television sound carrier.

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